Heart-healthy diets are naturally low in dietary cholesterol and can help to reduce the risk of heart disease and stroke

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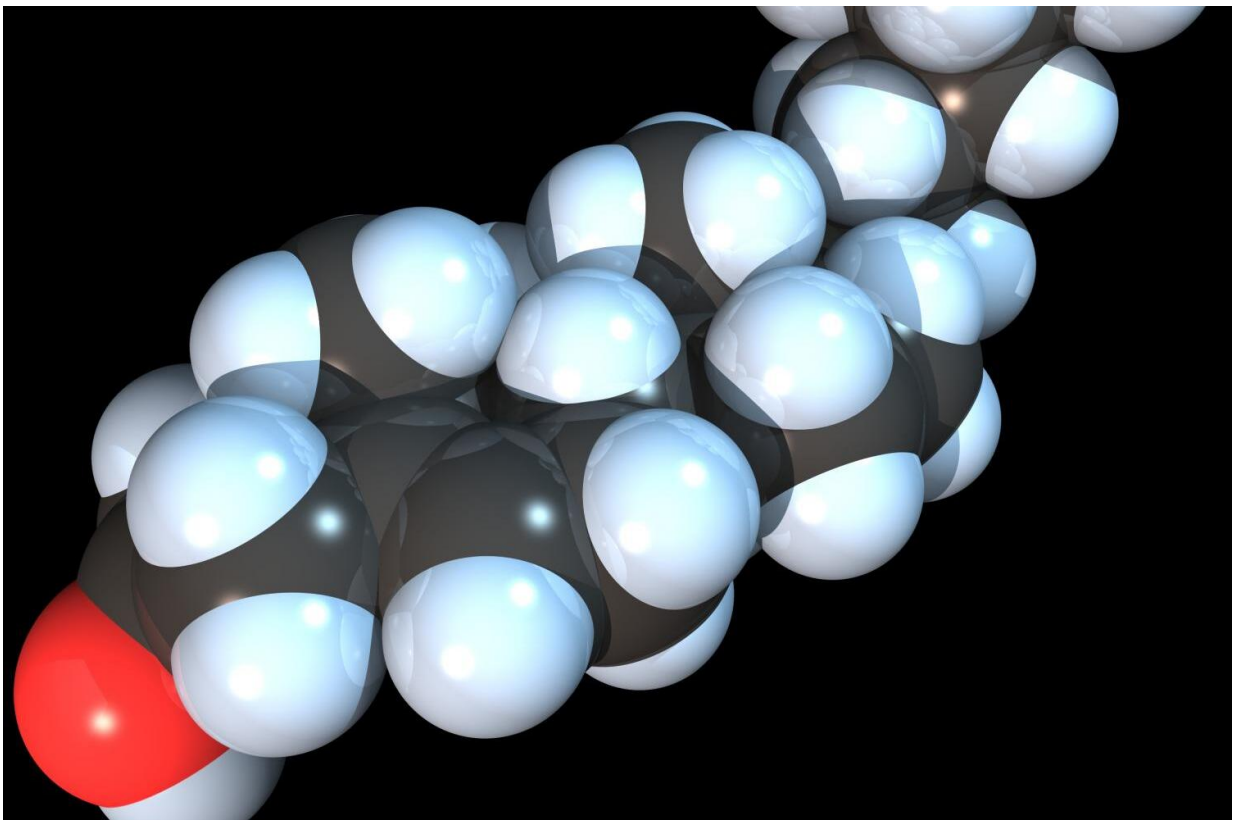

Space-filling model of the Cholesterol molecule. Credit: RedAndr/Wikipedia

Reducing dietary cholesterol by focusing on an overall heart-healthy dietary pattern that replaces saturated fats with polyunsaturated fats

remains good advice for keeping artery-clogging LDL cholesterol levels healthy. Such dietary patterns are naturally low in dietary cholesterol. Current research does not support a specific numerical limit on cholesterol from food according to a Scientific Advisory (Advisory) from the American Heart Association, published today in the Association's premier journal *Circulation*.

Much of the cholesterol in blood is manufactured in the liver and used for building cells. However, foods such as full-fat dairy products and fatty cuts of red and processed meats contain relatively high amounts of cholesterol and are also usually high in saturated fat, which may cause an accumulation of cholesterol in blood. Too much cholesterol in the blood contributes to the formation of thick, hard deposits on the inside of the arteries, a process that underlies most heart diseases and strokes.

Scientific research about the role of dietary cholesterol has not conclusively found a link between dietary cholesterol and higher LDL cholesterol at levels currently consumed. The differences in findings may be based on the way studies about diet are designed and the absolute amount of cholesterol fed, according to the Advisory. For example, evidence from observational studies conducted in several countries generally does indicate a significant association between dietary cholesterol and cardiovascular disease (CVD) risk. Observational studies, however, are not designed to prove cause and effect—they identify trends, often based on study participants filling out questionnaires about what they eat. Study findings from observational studies could be impacted by factors such as the difficulty of teasing out the specific effect of dietary cholesterol versus saturated fat because most foods that are high in saturated fats are also high in dietary cholesterol.

The meta-analysis included in the Advisory that included randomized, controlled, dietary intervention trials, which are designed to prove cause

and effect, found that there was a dose-dependent relationship between dietary cholesterol and higher levels of artery-clogging LDL cholesterol when the range of dietary cholesterol tested was beyond that normally eaten. This relationship persists after adjustment for dietary fat type. The feeding studies included in the meta-analysis provided food to participants, so the researchers could accurately understand what people eat, however, they are costly to conduct. Hence, the meta-analysis was limited by the small number of participants in each randomized trial. The researchers were also not able to adequately compare the role of artery-clogging LDL cholesterol, HDL "good" cholesterol and total cholesterol in the blood among the participants because of their small size—and HDL and total cholesterol could influence the results.

"Consideration of the relationship between dietary cholesterol and CVD risk cannot ignore two aspects of diet. First, most foods contributing cholesterol to the U.S. diet are usually high in saturated fat, which is strongly linked to an increased risk of too much LDL cholesterol. Second, we know from an enormous body of scientific studies that heart-healthy dietary patterns, such as Mediterranean-style and DASH style diets (Dietary Approaches to Stop Hypertension) are inherently low in cholesterol," said Jo Ann S. Carson, Ph.D., R.D.N., L.D., immediate-past chair and current member of the American Heart Association's nutrition committee and professor of clinical nutrition at UT Southwestern Medical Center in Dallas, Texas when the advisory was written.

"Eating a nutrient-rich diet that emphasizes fruits, vegetables, whole grains, low-fat or fat-free dairy products, lean cuts of meat, poultry, fish or plant-based protein, nuts and seeds. Saturated fats—mostly found in animal products such as meat and full fat dairy, as well as tropical oils—should be replaced with polyunsaturated fats such as corn, canola or soybean oils. Foods high in added sugars and sodium (salt) should be limited," said Carson.

As per the Advisory, in general, egg intake was not significantly associated with the risk of cardiovascular disease in the studies that were examined. It is reasonable to eat one whole egg (or its equivalent such as 3 ounces of shrimp) daily as part of a heart-healthy diet for healthy individuals.

The Advisory continues to support the recommendation in the 2019 American College of Cardiology/American Heart Association Guideline on the Primary Prevention of Cardiovascular Disease to reduce intake of dietary cholesterol for overall heart health.

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